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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,702	07/28/2003	Shinji Sugihara	240879US2SRD	3170
22850	7590	06/30/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			NGUYEN, TU T	
			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/627,702

Applicant(s)

SUGIHARA ET AL.

Examiner

Tu T. Nguyen

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 9-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>07/28/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Species I (claims 1-8) in the reply filed on 06/06/2005 is acknowledged.

Abstract

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

For this application, the abstract has more than 150 words.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

1) Claim 1, lines 17-18 are not clear. The phrase “detects a light intensity of the light” is not clear. It is not clear what “light” applicant want to refer to. Does applicant refer to the “transmitted light” or the “reflected light” or the “light source”?

2) Claim 1, lines 25-34, the phrase “a data memory in which ... the predetermined range; and” is not clear. The paragraph seems to have a grammatical error. In lines 26-28, the phrase “regarding the detected pattern data at the same time” is not clear. Does applicant mean “regarding the detected pattern are measured at the same time”?

3) Claim 8, lines 3-4, the phrase “regarding the detected pattern data the predetermined number of time” is not clear. How is the “predetermined number of times” connected to the “detected pattern data”?

Claims 2-7 are also rejected as being depended on an rejected claim.

For the purpose of examination, the claimed “detects a light intensity of the light” is treated as “detects a light intensity of the light source” and the phrase “regarding the detected pattern at the same time” is treated as “regarding the detected pattern are measured at the same time”.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4,8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tabata (5,995,219) in view of Imai et al (5,502,311).

With respect to claim 1, Tabata discloses a pattern inspection apparatus. The apparatus comprises: a stage 1 (fig 2) on which a plate 2 (fig 2) to be inspected including a pattern formed on the plate is laid; a light source 3 (fig 2) which irradiates the plate to be inspected with light; a photoelectric device 6 (fig 2) which photoelectrically converts the optical image of the pattern; a detected pattern data (observed data) generator which generates detected pattern data regarding the pattern based on a signal obtained by the photoelectric device (column 5, lines 30-35); a comparator 10 (fig 2) which compares the detected pattern data with the reference pattern data (the design pattern data) (abstract); output device (mini-printer, fig 2) for outputting the data.

Tabata does not explicitly disclose the claimed reference pattern data generator (design pattern data). Since Tabata discloses comparing the detected image to a reference pattern data (abstract), it would have been obvious that Tabata's system would have to have the claimed reference pattern generator in order to create the reference pattern data.

Tabata does not disclose the claimed light intensity sensor for detecting a light intensity of the light source and a barometric pressure sensor for detecting a barometric pressure in the pattern inspection apparatus. Imai disclose a system for determining defects on a surface. The system comprises: a sensor for measuring light intensity of light source 224 (fig 35); a sensor 226 (fig 35) for measuring the pressure around the system (column 48, lines 1-20). It would have been obvious to modify Tabata with Imai's sensors to measure the intensity of the light source and the pressure around the system to facilitate the measuring. Further, it would have been obvious to modify Tabata with the claimed status detector to ensure the condition of the system within an acceptable range.

Tabata discloses the claimed data memory to store the detected pattern data, the reference pattern data 35, 38 (fig 4) and a position data (column 7, lines 30-35). However, Tabata does not disclose storing the data in synchronization with the position data on the plate to be inspected and a detected value of the at least one of the light intensity and the barometric pressure deviating from the predetermined range. It would have been obvious to modify Tabata to store the data as claimed to provide more detail about the condition of the pattern to make the system easier to analyze the defects.

With respect to claim 2, since Tabata discloses an auto-focus control circuit (fig 2), Tabata would have to have a focus sensor in order to control the focus of the light.

With respect to claim 3, Since Imai discloses using an environment sensor to measure the environment of the system (column 48, lines 5-15) and the claimed vibration sensor would have been known in the art, it would have been obvious to modify Takata with the claimed vibration sensor to facilitate the measurement.

With respect to claim 4, it would have been obvious to modify Tabata with the claimed signal intensity profile analysis, a re-inspection control part and the status notification part to make the judgment of the system more accurate.

With respect to claim 8, it would have been obvious to modify Tabata's comparator to store the data as claimed for measuring different type of defects.

Allowable Subject Matter

Claims 5-7 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Prior arts of record do not disclose a signal intensity profile analysis part compares signal gradients of horizontal and vertical direction components of a pattern edge part of the detected pattern data with a first predetermined standard value, and an intensity and fluctuation of a signal of a pattern bright part with a second predetermined standard value as disclosed in claim 5 in combination with all the limitations of the base claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tu T. Nguyen whose telephone number is (571) 272-2424. The examiner can normally be reached on T-F 7:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Toatley Jr. can be reached on (571) 272-2800 Ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tu T. Nguyen
Primary Examiner
Art Unit 2877

06/25/2005